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When Do Warmth and Competence Sell Best? The ‘Golden Quadrant’ Shifts as a Function of
Congruity with the Product Type, Targets’ Individual Differences and Advertising Appeal
Type

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Abstract

Three experiments reported here uniquely test the effectiveness of warm versus competent advertising strategy as a function of congruence with other elements of the advertising context. These are: product involvement (Experiment 1, $n=96$); consumers' smartphone anxiety (Experiment 2, $n=60$), or self- versus other-profitability (Experiment 3, $n=100$). As expected, the 'golden quadrant' (optimum warmth *and* competence for advertising effectiveness) does shift: Competence is more important for high-involving products, but warmth wins for highly anxious participants or when the highly-involving service is accompanied by people-focused appeals. An expansion of the Stereotype Content Model is discussed in the context of the congruity principle.

Key words: stereotype content; congruence; advertising effectiveness

When Do Warmth and Competence Sell Best? The ‘Golden Quadrant’ Shifts as a Function of Congruity with the Product Type, Targets’ Individual Differences and Advertising Appeal Type

While social psychologists have been acquiring evidence for the universality of warmth and competence dimensions in social perception for some time now (Fiske, Cuddy & Glick, 2007; Judd, James-Hawkins, Yzerbyt & Kashima, 2005; Wojciszke & Abele, 2008), consumer psychologists have only recently started to test these dimensions in a consumer context (Kervyn, Fiske & Malone, 2012; Zawisza & Cinnirella, 2010). This recent research shows promise but it is not free of contradictions: The so-called ‘golden quadrant’—understood as high warmth and competence (Aaker Vohs & Mogilner, 2010)—has not consistently led to the best purchase intent outcomes. It is argued here that such contradictions do not undermine the applicability of these two dimensions to advertising. Rather, they indicate the need to extend the model to include another variable widely discussed in advertising literature: congruity (Fleck & Quester, 2007; Spence & Gallace, 2011). Specifically, it is proposed that the importance of warmth and competence in determining advertising effectiveness is relative: It depends on the extent to which these two dimensions are *relevant* to advertising context: e.g. to the product type, targets’ individual differences and advertising appeal type. Such variables are absent in social perception and thus fall outside the remit of the original Stereotype Content Model. As such the ‘golden quadrant’ should be re-defined to mean the *optimal* level of warmth and competence (rather than high values of both).

Universality of Warmth and Competence and their Applicability to Consumer Context

Social psychological literature reports consistently that dimensions of warmth (a.k.a. community or collectivism) and competence (a.k.a. agency or individualism) universally

underlie social judgments (see Judd et al., 2005 for an overview). According to Fiske et al. (2007), in social encounters, individuals need to assess the others' warmth (e.g. their intention to help or hurt) and competence (e.g. their ability to help or hurt) to aid survival. The Stereotype Content Model (SCM³) posits that the content of stereotypes is, therefore, often a mix of the two. For example, 'businessman' is stereotyped as cold but competent (Eckes, 2002), while the opposite applies to 'househusband' (Zawisza & Cinnirella, 2010). The SCM has gained empirical support across stereotypes of different social groups such as Black people (Fiske, Cuddy, Glick & Xu, 2002); gay people (Clausell & Fiske, 2005); men and women (Eckes, 2002); the elderly (Cuddy, Norton & Fiske, 2005) or nationalities (Lee & Fiske, 2006). Kervyn et al. (2012) have extended the SCM formally to the perception of brands and have proposed a Brands as Intention Agents Framework (BIAF). According to this approach, brands, as social objects, are seen to have intentions (which determine warmth) and abilities (which determine competence). Indeed, popular, subsidized, luxury and troubled brands (Kervyn et al., 2012), for-profit versus non-profit firms (Aaker et al., 2010), as well as brands with different country of origin (Xu et al., 2013) are perceived differently on competence and warmth.

However, while support for the SCM seems consistent at the level of brand perception it is less so in terms of predicting purchase intent. For example, paternalistic gender portrayals were more effective than envious ones in advertisements for mineral water (Zawisza & Cinnirella, 2010). Similarly, purchase intent for fruit juice and disposable batteries was determined more by warmth than competence (Xu et al., 2013). However, it was the perceived lack of competence of the non-profit firms that diminished purchase intent (for a laptop bag and physical activity tracker; Aaker et al., 2010) and boosting these firms' perceived competence neutralized this effect. The authors therefore concluded that the

³ Throughout the article the following recognized in the literature abbreviations are used: SCM for Stereotype Content Model, BIAF for Brands as Intentional Agents Framework, and DIA for Double Interest Account.

1 admiration stereotype (high warmth and competence) may be the most successful advertising
2 strategy —the so called ‘golden quadrant’. However, their ‘admiration’ (or, strictly speaking,
3 ‘competence boost’) strategy for non-profit firms still did not result in *higher* purchase intent
4 compared to for-profit firms (which were high on competence and low on warmth). In other
5 words, the ‘golden quadrant’ did not result in a *better* purchase intent outcome than the
6 ‘competent quadrant’ (high competence and low warmth). Indeed, the authors state that
7 competence is more important than warmth in determining purchase intent. Similarly, Aaker
8 et al. (2012) reported that purchase intent was boosted by a brand’s competence and the
9 competence x warmth interaction (across various brands and product categories). Thus, again
10 their ‘golden quadrant’ was skewed towards the competence dimension.

11 The literature review above shows that the ‘golden quadrant’ does not guarantee the
12 highest purchase intent. In fact, the highest purchase intent is sometimes achieved in the
13 ‘warm quadrant’ (high warmth and low competence; Zawisza & Cinnirella, 2010; Xu et al.,
14 2013) or in the ‘competent quadrant’ (Aaker, et al., 2010, 2012). Thus the nature of the
15 ‘golden quadrant’ should be re-defined to mean the *optimal* level of warmth and competence
16 for purchase intent rather than as high level of both. This bears, however, a question of when
17 warmth and competence sell best. We argue here that extending the SCM/BIAF models by
18 adding the principle of congruity (the relevance of warmth and competence to third variables
19 present in an advertising context) could usefully serve as a predictive framework in
20 answering this question.

21 **Extending SCM/BIAF: The Congruence Principle**

22 The principle of congruence, or compatibility, has been observed in the contexts of
23 persuasion (Wells & Petty, 1980), occupational setting (Koenig & Eagly, 2014) and judicial
24 verdicts (Jones & Kaplan, 2003), and has been identified as a factor which aids brands’ and

advertising success (Fleck & Quester, 2007). However it has not been explicitly applied to the two dimensions of social perception to predict their influence on purchase intent. Nevertheless, there are reasons to believe that the relevance of warmth and competence to factors present in consumer context, but absent in social perception, is important. For example, as some speculate, warmth may be more important for services that require trust (e.g. hospitals, Aaker et al., 2010) and the importance of both dimensions may vary as a function of product type (Aaker et al., 2012; Fiske, Malone & Kervyn, 2012) and individual differences (Bennett & Hill, 2012; Fournier & Alvarez, 2012). Indirect empirical support for the relevance principle comes from research on job applications (a form of self-advertising). For example, compatibility between the warmth of the candidate's name and the nature of the job (e.g. requiring warmth vs. competence) resulted in higher job suitability judgements (Copley & Brownlow, 1995). Moreover, appearing both warm and competent was especially important for out-group job applicants (e.g. of Arab origin; Agerström, Björklund, Carlsson & Rooth, 2012).

The aim of the present paper is to test the proposed relevance principle directly. A convincing test would show that the best purchase intent outcomes for the same (warm or competent) ad types vary systematically as a function of their content's relevance to third variables important in advertising context. We employed three such variables in three separate experiments: product type, audience characteristics and advertising appeal type. It is argued here that the 'golden quadrant' (Aaker et al., 2012) or, more precisely, the importance of warmth and competence for purchase intent, may 'shift' as a function of the relevance of these variables to the concepts of warmth and competence encapsulated by the endorser's image in the ad. The rationale for the three experiments is outlined below.

Product Type and Relevance of Warmth and Competence (Experiment 1).

Warmth and competence may be differentially relevant depending on product type. For

example, high-involving products require careful pre-purchase consideration (Petty & Cacioppo, 1983) and competence in evaluating the product's properties to diminish possible purchase-related risk. Thus, it is possible that competence is more relevant (than warmth) to that product type. For low-involving products on the other hand, a simple affective positivity heuristic may be in operation where the warm strategy may be more relevant, and therefore effective. Indeed, studies which use low-involving products (e.g. mineral water; Zawisza & Cinnirella, 2010; fruit juice or disposable batteries; Xu et al., 2013) report greater importance of warmth over competence for purchase intent, and those which use somewhat higher-involving products (eco-friendly laptop bags or activity tracker) report greater predictive power of competence (over warmth, Aaker et al., 2010). Interestingly, studies which combine data across various categories of products report importance of both dimensions (Aaker et al., 2012, Bennett & Hill, 2012; Kervyn et al., 2012). Therefore, it was predicted in Experiment 1 here that: (a) high-involving products (smartphones) will trigger higher purchase intent when advertised using a competent (vs. warm) ad strategy (H1); and (b) low-involving products (toothpaste) will trigger higher purchase intent when advertised using a warm (vs. competent) ad strategy (H2). Such a pattern of findings would indicate that the 'golden quadrant' shifts according to product type in line with the relevance principle.

Consumer Individual Differences and Relevance of Warmth and Competence (Experiment 2). The relevance principle may be further demonstrated by showing that a specific subset of people respond with higher purchase intent to a warm rather than competent advertising campaign for the same high-involving product (smartphone). Warmth may be particularly important for individuals who are high (vs. low) on anxiety in their brand relationship style (MacInnis, 2012). Indeed, in hypothetical selling context, trust or warmth, respectively, were more important for the 'buyers' in conditions of higher perceived risk (e.g. Van Swol, 2003), and in cases of product failure (Xu et al., 2013).

As argued above, the high-involving nature of the product should trigger higher purchase intent in the case of the competent campaign. However, for some, the nature of the product may be anxiety-provoking and for them the warm campaign should result in higher purchase intent. Specifically it is predicted that: (a) the competent advert strategy will be less effective for individuals who have high smartphone anxiety levels than for those who are less anxious (H3), and (b) individuals who have high smartphone anxiety levels will prefer the warm ad type strategy over the competent one (H4). Such a pattern of findings would indicate that the ‘golden quadrant’ shifts according to personal differences in line with the relevance principle.

Self- versus People-focused Appeal Type and Relevance of Warmth and Competence (Experiment 3). A final demonstration of the relevance principle focuses on the congruence of warmth and competence with the type of appeal (i.e. self- vs. people-focused) employed in the same advertising campaigns. While SCM proposes that assessment of others’ warmth is evolutionarily more important than assessment of their competence (Fiske et al. 2007), as discussed above, in brand context this does not hold. Fiske et al. (2012, p. 206) suggest that ‘brands may have a more personal contact than many out-groups do, [and] so people might differ more systematically’ in their perception of brands. This statement implies that the closeness between the brand and the consumer’s self may determine the perceived relevance of warmth and competence to a brand.

However, this is not unique to human-brand relationships. According to Wojciszke’s (2005) Double Interest Account (DIA), in social situations observers are interested in the actor’s warmth. This is because observers, by virtue of their position, may be the target of the other’s actions. However, those acting have a greater interest in competence, because the action needs to be carried out competently in order to benefit them. Moreover, close others will be evaluated similarly to oneself. So the typical primacy of warmth over competence

reverses in evaluations of self and close friends (Wojciszke & Abele, 2008). Thus, the relevance principle implicitly underlies the Double Interest Account. By extension, we predict that when it comes to self- versus people-focused blood donation service appeals: (a) the competent ad strategy should perform better (than the warm one) in the self-focused appeal condition (H5), and (b) the warm ad strategy should perform better in the people-focused appeal condition (as compared to the self-focused condition) (H6). Such a pattern of findings would demonstrate that the ‘golden quadrant’ shifts as a function of appeal type in line with the relevance principle.

Overview of the Study

All three experiments are guided by the novel research question: Does the ‘golden quadrant’, understood as the *optimum* level of warmth and competence, shift as a function of the relevance of warmth and competence to variables absent in the SCM/BIAF, such as product type, individual differences and appeal type? To investigate this question convincingly the warm and competent content of the advertisements employed in each experiment is kept constant. This allows for direct testing of the predicted changes in purchase intent as a function of the relevance of the adverts’ content to the three context variables discussed: product type (Experiment 1), individual differences (Experiment 2) and appeal type (Experiment 3). If the relevance principle does not apply then the same pattern of preferences should emerge in each experiment.

In response to Xu et al.’s (2013) recognition of the limitations of correlational studies, which currently dominate the emerging field of research on the application of SCM to consumer context, an experimental design is applied here in all three of the studies, and the ad’s warmth and competence are manipulated via the product endorser (warm househusband vs. competent businessman; Zawisza & Cinnirella, 2010). This follows Fournier and Alvares’

(2012) argument that one of the ways brands may become personified (and thus perceived as intentional agents possessing warmth and/or competence) is through association with the spokesperson or character in the ad. They also state that technological products lend themselves especially well to anthropomorphism. Therefore the products chosen for Experiments 1 and 2 are smartphones and toothpaste. Experiment 3 extends generalizability of the observed patterns to a (high-involving) service rather than a product: the blood donation service.

Experiment 1: High- versus Low- Involving Products and Relevance of Warmth and Competence

Method

Design. The study followed a 2 (advert type: warm vs. competent) x 2 (product type: low- vs. high-involving) between subjects design with purchase intent serving as a dependent variable.

Participants. Ninety-six female students, aged 21.20 on average, were recruited from the University of Winchester on a voluntary basis. The majority of them was White British (90.6%) and studied psychology (77.1%).

Procedures, Stimuli and Measures

Participants were told that the study was assessing which techniques work best in advertising. They were provided with a booklet containing information sheet, consent form, demographic questions and one (out of eight) advertisements (assigned randomly), followed by purchase intent and manipulation check scales (measuring warmth, competence and product involvement). Data were collected in groups of 5-6 people and sessions took around ten minutes. Participants were debriefed about the aims of the study.

Advert type. The warmth and competence of the ads were manipulated via the characters used in them. Following Zawisza and Cinnirella (2010) and Eckes (2002), depictions of competent and warm male characters were used (businessman vs. househusband respectively). These were carefully pre-selected in terms of warmth and competence (and matched for attractiveness in a separate study (Zawisza, 2006, pp. 227 and 326)⁴. To boost external validity, two versions for warm and two versions for competent portrayals were used. The ads were printed advertisements prepared specially for the purpose of the experiment. In the competent ad types, both males were dressed in smart suits, the first was pictured in an office with a newspaper in his hand, and the second with a background setting of a busy city street. For the warm ad types, the male figure was dressed in jeans and a causal top, and was seen ironing, on his own (version 1) or while holding a young child (version 2). Other elements of the ads were kept constant: In all cases the men were depicted from their waist up; they were smiling and looking ahead, at the documents or at the child. A headline was placed at the top, additional text about the product at the bottom and the product itself in the middle right section of the ads.

Product type. The high-involving product chosen was a smartphone and the low-involving product was toothpaste. In the case of the smartphone the heading read: ‘*New generation Omega 2000*’ and the text below specified properties of the product (‘*excellent for typing emails, built-in sat nav, 8-megapixel camera with flash, social network access, fast, efficient web browsing*’). In the case of the toothpaste the heading read: ‘*New Brite Toothpaste*’ with the text below the ad stating ‘*stronger teeth and fresh breath confidence for*

⁴ All four portrayals were rated as more than average in terms of attractiveness without being overly attractive – (scores ranged between .72 and 1.71 on a -3 to 3 attractiveness Osgood differential scale). Almost all of the four male pictures were evaluated similarly in terms of attractiveness with two exceptions: Picture 3 scored higher ($M=1.39$, $SD=1.54$) than Picture 2 ($M=.72$, $SD=1.07$) and this effect was of medium strength: $d=0.51$; Picture 2 also scored lower than non-traditional Picture 5 ($M=1.71$, $SD=1.21$) and this effect was strong: $d=0.87$. Therefore, an additional 4(ad version) x 2(product involvement) ANOVA was run but this showed that the 2 versions of the 2 ad types did not influence ad effectiveness differently. The same held for Experiment 2 where these stimuli were used. Therefore, the scores were collapsed across the two versions of each ad type and further analyses were run using ad type on 2 levels only: warm or competent.

all'. Both brands were unknown to the participants and created specifically for this study to avoid familiarity effects.

Purchase intent. Ad effectiveness was captured with the single item purchase likelihood scale (0-100%) from Burke and Edell (1989). Participants were asked to '*indicate what the likelihood is that you would buy this brand next time you are shopping, should you need this type of product*'.

Manipulation checks. The character's warmth and competence were measured with the Kentworthy and Tausch (2008) scales. Participants were asked to rate from 1 (*not at all*) to 7 (*very much*) whether they thought the person in the ad was: *honest, trustworthy, sincere* and *compassionate* ($\alpha = 0.79$), as well as *intelligent, hard working* and *talented* ($\alpha = 0.71$, after the item *creative* was removed from the scale due to lowering the scale's reliability). Product involvement level was tested with one item: '*How much effort would you usually put into making a decision on the purchase of the product advertised here?*' (where 1 = *none* and 7 = *a lot*).

Results and Discussion

Given the documented invalidity of the mainstream null-hypothesis significance-testing procedure (NHSTP) (Trafimow, 2003; 2014; Trafimow & Rice, 2009), inferential statistics such as *t* and *F* tests have not been reported here. Instead, effect sizes and relevant descriptive statistics are analysed for each experiment.

Manipulation checks. Both manipulations proved to be effective: The warm ads were perceived as warmer ($M=4.62$, $SD=1.15$) and less competent ($M=4.25$, $SD=1.14$) than the competent ads ($M=4.22$, $SD=0.67$ and $M=4.98$, $SD=1.08$ respectively). In both cases the effects were of medium size: $d=0.43$ for warmth and $d=0.66$ for competence. Moreover, the

smartphone was perceived as a higher-involving product ($M=5.06$, $SD=1.41$) than toothpaste ($M=3.69$, $SD=1.64$) and this effects was large: $d=0.90$.

Main analysis. To illuminate the predicted ad type x product type interaction effect on advertising effectiveness (H1 and H2), the differences between the relevant means in the 2x2 design were analysed. The sizes of the main effects were negligible ($\eta_p^2=.007$ for ad type and $.004$ for product type where the competent ad type and the high-involving product type triggered slightly higher purchase intent). However, the interaction effect of interest achieved a modest size: $\eta_p^2=.033$. In line with H1, for the high-involving product (smartphone) the competent ad types were moderately more effective ($M=49.58$, $SD=24.93$) than the warm ones ($M=35.00$, $SD=28.44$), $d= 0.55$. Moreover, the competent ad was moderately more effective when it was used to advertise the high-involving smartphone ($M=49.5$, $SD=24.92$) than the low-involving toothpaste ($M=36.25$, $SD=29.31$), $d=0.49$. As predicted by H2, for the low-involving product the warm ad strategy scored higher ($M=41.67$, $SD=27.77$) than the competent one ($M=36.25$, $SD=29.31$) but the difference was small, $d=0.19$. Similarly, the warm ad was somewhat more effective with the low-involving product ($M=41.67$, $SD=27.77$) than with the high-involving one ($M=35.00$, $SD=28.44$) but, again this effect size was small, ($d= 0.23$). See Table 1 for summary of descriptive statistics.

Thus the findings indicate that competence is more important than warmth in case of high-involving products, and, although small, the direction of the differences revealed for the low-involving products suggests the opposite (greater importance of warmth over competence). This pattern of findings challenges the uniform ‘golden quadrant’ hypothesis (Aaker et al., 2012) and shows that the optimal level of warmth and competence varies according to product type in line with the relevance principle proposed here. In other words, the ‘golden quadrant’ shifts as a function of the relevance of warmth and competence to product type.

However, are there situations when warmth may be more important than competence even for high-involving products? If the relevance principle holds then the subset of participants who find smartphones anxiety provoking should find the warm ad content more effective than the competent ad content even though the product is high-involving. Experiment 2 investigates this possibility by further testing the effectiveness of warm and competent ads for smartphones only and by introducing consumers' smartphone anxiety as a second variable. Since research has shown that anxiety over technology increases with age (Czaja et al., 2006; Ellis & Allaire, 1999; Rogers, Meyer, Walker & Fisk, 1998), and in order to ensure enough variability in the data, the sample in Experiment 2 includes both students and non-students.

Experiment 2: Consumers' Anxiety towards Smartphones and Relevance of Warmth and Competence

Method

Design. A 2 (ad type: warm vs. competent) within subjects x 2 (anxiety level: highly vs. lowly anxious) between subjects Mixed-Factorial design was employed (but see also footnote 3 below). The dependent variable was advertising effectiveness.

Participants. Of the 60 participants recruited (16 males, 44 females), 35 were psychology students at the University of Winchester; they were given course credits in exchange for their (voluntary) participation. The remaining participants were approached on an opportunistic basis at the same university campus and consisted of university workers aged over 40. Participants' average age was 34.37 ($SD= 18.21$) years, ranging from 18 to 79. The majority was White British (80%).

Procedure, Stimuli and Measures

The procedure and stimuli were the same as in Experiment 1, except for the following: Participants were told the study was designed to examine the relationship between the color scheme used in advertisements and emotions. Each participant was shown two (out of the four) advertisements used in Experiment 1: one version (out of two) of a warm ad and one (out of two) of a competent ad (order counterbalanced). However, this time only one product was advertised: the high-involving smartphone. Participants were then asked to rate the advertising effectiveness, liking for the color scheme and model's warmth and competence. (No analysis was conducted for the color scheme—these items were only used to strengthen the cover story and the color scheme was not actually manipulated.) Lastly, participants completed the attitude towards smartphones measure.

Advertising effectiveness. Dittmar and Howard's (2004) advertising effectiveness index was used. Participants were asked to rate their reaction to the ad and brand (each presented with two answer options anchored 1 - *very unfavorable* or *very negative* to 6 - *very favorable* or *very positive*) as well as to indicate the likelihood they would purchase an Omega 2000 smartphone on their next shopping trip if this brand cost the same as the mobile phone brand they used normally (1 - *very unlikely* to 6 - *very likely*). Higher scores on the scale indicated greater ad effectiveness. The scale had good reliability ($\alpha = .82$). See Dittmar and Howard (2004) for further evidence of the reliability and validity of the tool.

Manipulation check. Two, 6-point single-item, semantic differential scales were used to assess the ad type manipulation. They were anchored 1 - *cold* or *incompetent* to 6 - *warm* or *competent* respectively.

Anxiety towards smartphones. The Loyd and Gressard (1984) Computer Attitude Scale was modified for assessment of anxiety towards smartphones. Originally this tool consisted of four subscales (10 items each): anxiety to, confidence with, liking of and attitude towards usefulness of computers. Here only the first three were employed on the basis of

their relevance. The scale wording was adapted in order to measure attitudes towards smartphones. For example, the statement '*I'm no good with computers*' was changed to '*I'm no good with smartphones*'. Participants' responses were indicated on a 5-point Likert scale (1 - *strongly disagree* to 5 - *strongly agree*). The Alphas for the modified sub-scales were .87, .93 and .89 respectively. Footnote 3 below provides evidence for the adapted scale's validity and Loyd and Gressard (1984) discuss the validity of the original tool. Negatively worded items were reverse coded. Higher average scores indicated higher anxiety with regard to smartphones, lower confidence with this technology and greater disliking of these phones.

Results and Discussion

Manipulation checks and data preparation. As expected, the competent models were rated as somewhat colder ($M=3.58$, $SD=1.11$) than the warm models ($M=4.52$, $SD=1.20$), $d=0.22$, and as moderately more competent ($M=4.38$, $SD=1.00$) than the warm models ($M=3.48$, $SD=1.24$), $d=0.42$. Participants were divided into highly versus lowly anxious according to a median split (but see footnote 3) on all three subscales of the Attitudes to Smartphones Scale ($Me_{\text{anxiety}}=1.90$; $Me_{\text{confidence}}=2.00$ and $Me_{\text{liking}}=2.5$). This way, only participants who were consistent on all three subscales were included in further analysis. This *a priori* procedure reduced the sample size for analysis to 44 participants.

Main analysis. To test the possibility that the level of smartphone anxiety may affect the relevance, and thus effectiveness, of a competent (vs. warm) ad strategy for high-involving products such as smartphones (as observed in Experiment 1) the relevant means in the 2x2 design were analysed⁵. Again, the main effect of ad type reached a negligible effect

⁵ Two additional analyses were also conducted. First, the sample source was entered as a third variable (students vs. other). Since any effects of this variable on ad effectiveness were likely due to chance, sample source was excluded from further analyses. Second, the data from the whole sample were also analysed using moderated regression where the anxiety level was treated as a continuous variable – a procedure which avoids median split and the associated reduction of sample size and loss of power. This analysis also detected an Ad Type x Anxiety interaction effect ($\beta = .45$). This effect was of the same shape as one returned by an ANOVA and the analysis

size of $\eta_p^2=.016$ (again, the competent ad type being a little more effective). The main effect of anxiety was small ($\eta_p^2=.022$) and indicated somewhat higher effectiveness of both ad types for non-anxious individuals. However, the qualifying interaction effect was large, $\eta_p^2=.136$, and in the predicted direction. In line with H3, highly smartphone-anxious individuals preferred the competent ad strategy less ($M=2.76$, $SD=0.90$) than lowly anxious ones ($M=3.4$, $SD=0.91$), and this effect was substantial: $d=0.71$. Moreover, in agreement with H4, the former group also showed a tendency to prefer warm ads ($M=3.06$, $SD=0.78$) over competent ads ($M=2.76$, $SD=0.90$), and the effect size was medium in strength: $d=0.64$. Further, lowly anxious participants preferred the competent ad ($M=3.40$, $SD=0.91$) over the warm one ($M=2.83$, $SD=0.97$)—an effect which was small: $d=0.31$. A warm ad was slightly more effective for the highly anxious than the lowly anxious participants ($M=3.06$, $SD=0.78$ vs. $M=2.83$, $SD=0.97$)—an effect of a small size: $d=0.26$. Table 1 provides summary of descriptive statistics and illustrates this interaction.

Taken together these results qualify findings from Experiment 1: They indicate that indeed competence may not always be more important than warmth for high-involving products. Similarly to Experiment 1, competent ads were slightly more effective than warm ones, especially for the lowly smartphone-anxious people. However, for highly smartphone-anxious individuals warmth was more effective than competence. Thus, again the ‘golden quadrant’ shifted as a function of the relevance of warmth and competence to specific consumers.

Would warmth still be more relevant than competence for high-involving but anxiety-provoking services such as a blood donation service? Or will the ‘golden quadrant’ shift again with the preference for warmth over competence reversing as a function of their

reported above. As this analysis is more powerful than ANOVA, it also detected a main effect of anxiety ($\beta = -.38$), which indicated that the lower smartphone anxiety, the greater the reported effectiveness of both ad types. This effect is unsurprising and speaks to the validity of the adapted Smartphone Anxiety Scale.

relevance to appeal type, as implicitly proposed by Double Interest Account (Wojciszke & Abele, 2008)? Experiment 3 compares the performance of warmth and competence ad types as a function of self- versus people-focused appeal types to investigate this possibility.

Experiment 3: Self- versus People-Focused Blood Donation Appeals and Relevance of Warmth and Competence

Method

Design. The experiment followed a 2 (ad type: warm vs. competent) x 2 (service type: self- vs. people-focused) between-subjects design where the intent to use a blood donation service was the dependent variable.

Participants. A hundred female psychology undergraduates from the University of Winchester, aged on average 21 ($SD=5.34$) were recruited on a voluntary basis in exchange for course credit. The majority was White British (93%) followed by 1% Bulgarian, 1% Kosovan, 1% Japanese, 1% German, 1% South Korean, 1% American and 1% Nigerian.

Procedures, Stimuli and Measures

The same procedures, stimuli and measures as in Experiment 1 were used, with the following exceptions. This time, participants were informed that they were taking part in a '*study of ad effectiveness for various services*'. Only one version of the warm and competent ad types from Experiment 1 was used here (the suited man in the office and the casually dressed ironing man without a child). These two ad types were crossed with the self- versus people-focused ad type appeals. Thus, each participant saw one of the four possible adverts. They were asked to assess them in terms of likelihood of service use and model's warmth ($\alpha=.91$) and competence ($\alpha=.78$) as in Experiment 1.

Service Type. The self- versus people-focused appeal type was manipulated via the use of logos, text and slogans (placed at the bottom, top and in the center of the ads

respectively). The logo in the people-focused condition showed two hearts and read: *'Save a life, Give Blood'*, and the text read: *'Until you donate your own blood you will never appreciate how much you have to give'*. Moreover the slogan stated: *'Help others, they need it!'* In the self-focused condition the logo pictured one heart and read: *'Store your own blood'* while the text read: *'Until you store your own blood you will never appreciate what you have'*. The slogan stated: *'Help yourself in case you need it!'*

Service use intent. The single-item purchase intent scale from Experiment 1 was adapted for the purpose of blood donation service use and rephrased to read: *'Indicate the likelihood that you will use the service advertised above the next time you are faced with such a decision'*. As before, answer options ranged from 0% to 100%.

Results and Discussion

Manipulation checks. The manipulation worked as expected: The warm model was perceived as warmer ($M=5.37$, $SD=0.87$) than the competent model ($M=4.78$, $SD=1.33$). The warm model was also perceived as less competent ($M=4.89$, $SD=0.65$ vs. $M=5.20$, $SD=0.79$ respectively). Both effects were of medium size: $d=0.54$ and $d=0.43$ respectively.

Main analysis. To illuminate the interaction effect predicted by H5 and H6 differences between the relevant means in the 2x2 design were analysed. Again, the main effect of ad type was of negligible size, $\eta_p^2=.002$, and consistent in its direction (slightly greater effectiveness of the competent ad type). The analysis also detected an unexpected main effect of appeal type, with the people-focused appeal being more effective ($M=47.20$, $SD=24.58$) than the self-focused appeal ($M=29.40$, $SD=21.70$), which reached a large effect size: $\eta_p^2=.136$. This main effect was, however, qualified by a medium-size ad type x appeal type interaction effect, $\eta_p^2=.046$. Further analyses indicated that, in line with H5, in the self-focused appeal condition the service-use intent was moderately higher in the case of the competent ad ($M=35.20$, $SD=22.93$) compared to the warm ad ($M=23.60$, $SD=19.12$), $d=0.55$.

Also, as predicted by H6, the warm ad triggered substantially higher service-use intent in the people-focused condition ($M=51.20$, $SD=26.19$) than in the self-focused condition ($M=23.60$, $SD=19.12$), $d=1.22$. Moreover, the effectiveness of the warm (vs competent) ad strategy was moderately higher for the people-focused appeal, $d=0.35$, and the competent approach worked substantially better for the self- than the people-focused appeals, $d=0.35$. The latter two effects were also consistent with the relevance principle underlying the DIA theory. See Table 1 for descriptive statistics illustrating the nature of this interaction.

--- insert Table 1 around here ---

The findings from Experiment 3 indicate that even in cases of high-involving anxiety-provoking services such as blood donation, warmth may play a greater role than competence when a people-focused appeal is employed. However, when the appeal is focused on the benefits to the self the opposite is true. This provides support for the Double Interest Account (Wojciszke & Abele, 2008) and, more specifically, for the broader principle of relevance tested here. Experiment 3 illustrates again that the ‘golden quadrant’ shifts as a function of the relevance of warmth and competence to the appeal type.

General Discussion

The main aim of the present investigation was to address gaps in the SCM/BIAF literature and to propose ways of expanding these models by including the aspect of relevance of the proposed universal dimensions of warmth and competence to variables present in consumer context but absent in social perception (product type, individual differences and advertising appeal type). As discussed, the proposed in the literature ‘golden quadrant’ (i.e. the high warmth and competence as a recommended strategy for the best purchase intent outcomes) has not emerged consistently from empirical research. Our analysis of this literature suggests that in some situations the ‘warm quadrant’ or the ‘competent quadrant’ result in the best

purchase intent outcomes. However, an overarching theoretical framework which would enable predictions as to when warmth and competence sell best has been lacking. We thus proposed to re-define the ‘golden quadrant’ to mean the *optimal* level of warmth and competence and argued that their importance for purchase intent is governed by the relevance principle. To illustrate the operation of this principle, we kept the warm and competent content of the advertisements constant while manipulating the three contextual variables in three separate experiments. If the relevance principle had not held we should have seen the same pattern of preferences across the three experiments. However, this was not the case. The present findings add to the current body of knowledge at both the theoretical and practical levels and show that the ‘golden quadrant’ does shift in line with the relevance principle.

Specifically, in line with expectations, competence was more important (resulted in higher purchase intent) in the case of a high-involving product (a smartphone) than in the case of a low-involving one (toothpaste, Experiment 1), and the smartphone triggered greater purchase intent when advertised using the competent (vs. warm) ad strategy. This is in line with previous studies which indicate that competence is indeed more relevant or important for high- than for low-involving products (Aaker et al., 2010). Moreover, warmth seemed slightly more effective than competence for the low-involving product. The direction of this effect was in line with other studies using such products (Xu et al., 2013; Zawisza & Cinnirella, 2010) and confirmed the relevance principle.

Experiment 2 further demonstrated the relevance principle. It showed that the pattern obtained for the high-involving product in Experiment 1 can be reversed for a specific subtype of people. While non-anxious consumers still preferred competent (vs. warm) advertising strategy for smartphones, smartphone-anxious individuals found the warm ad strategy more effective than the competent one. This finding provides empirical support to MacInnis’ (2012) suggestion that the warmth dimension may be particularly relevant to

1 individuals who are high on anxiety in their brand relationship style. It is also in line with Xu
2 et al.'s (2013) observation of greater predictive power of warmth (over competence) in
3 situations of product failure. Although participants' anxiety levels were not investigated
4 there, the product failure scenarios used may be argued to be anxiety-provoking (fire hazard
5 and salmonella contamination). It is therefore possible that any type of anxiety, whether
6 residing in the individual or in the product context, makes the warmth dimension more
7 important, thus shifting the 'golden quadrant' further even if the product is high-involving.

8 Experiment 3 has provided our final demonstration of the relevance principle and
9 showed that the need for warmth triggered by product-related anxiety may be reversed
10 further. While the 'warmth over competence' pattern held for people-focused advertising
11 appeals (where the warm ad strategy triggered greater blood donation service use intent), it
12 reversed for self-focused ones. In the latter case, the superiority of warmth over competence
13 proposed by SCM (Fiske et al., 2007) was reversed in line with the competing DIA approach
14 (Wojciszke & Abele, 2008). Importantly, the latter approach recognizes, though only
15 implicitly, the principle of relevance of warmth and competence in the social world.
16 Experiment 3 showed that this principle also applies to an advertising context. That is, the
17 self-benefit appeal (i.e. blood storage for one's own use rather than to help others) required
18 greater emphasis on competence over warmth even though the blood donation service may be
19 considered anxiety-provoking.

20 Thus, the 'golden quadrant', i.e. the *optimal* combination of competence and warmth,
21 may not always require equal emphasis on both elements, or greater emphasis on
22 competence, as previously suggested (Aaker et al., 2012). As was shown in the three
23 experiments, the 'golden quadrant' shifts, or changes its content, from greater emphasis on
24 competence to greater emphasis on warmth, depending on the relevance of these two
25 dimensions to variables present in the consumer context but absent in social perception (and

in SCM/BIAF). On a theoretical level, the novel findings reported here provide evidence for the need to extend SCM/BIAF by adding the principle of relevance of warmth and competence to contextual variables such as product type and individual differences. While these variables were suggested by some as useful additions to the model (Aaker et al., 2012; Fournier & Alvarez, 2012; Xu et al., 2013), until now no overarching principle determining their relationship with warmth and competence was offered. Moreover, our findings show that DIA (Wojciszke & Abele, 2008), a model that competes with SCM, is applicable to an advertising context too. The present paper also extends the literature on the congruence (a.k.a. match-up, fit or relevance) phenomenon by showing that it applies beyond brand extension (Fleck & Quester, 2007), sponsoring (Deitz, Myers & Stafford, 2012), celebrity endorsement (Choi & Rifton, 2012; Fleck, Korchia, & Le Roy, 2012) or cross-modal sensory marketing with its synesthetic correspondence principle (Spence & Gallace, 2011; Spence, 2012). The three experiments here have shown that a similar principle may operate when applying the more abstract social perception dimensions of warmth and competence to the perception of brands.

The present experiments have certain limitations that could be addressed by further research. For example, a single product of unknown brand was used here to represent high- versus low-involving product categories. While this increases control, it compromises generalizability. However, patterns similar to those found here were reported for other low-involving products (e.g. mineral water, Zawisza & Cinnirella, 2010; or fruit juice and disposable batteries, Xu et al., 2013), and other high-involving products (laptop bag and physical activity tracker, Aaker et al., 2010). Furthermore, the focus here was on one product category only. Other research may fruitfully explore product-category comparisons such as hedonic versus utilitarian, credence versus search and gendered versus gender-neutral products.

Consumer psychological characteristics other than smartphone- (or technology-) anxiety should also be investigated. For example, consumers with high need for cognition may prefer competence over warmth for various products. With regard to demographic variables, female participants were used in the present experiments (with the exception of Experiment 2 which was still dominated by females). While gender was not identified as a factor differentiating the perception of brands' warmth and competence, age and education were (Keller, 2012). Therefore caution is called for when generalizing the present findings beyond educated and young consumers.

Moreover, the findings here were mostly of small to moderate magnitude. While even small effects are important in an advertising context, as they can translate to large financial implications in highly saturated markets, further attempts could be focused on strengthening these effects (e.g. by employing TV medium or simulation advertising strategy; Escalas, 2004). Lastly, an admiration (high warmth and competence) ad strategy was not tested here. Would such an advertising strategy be optimal across all types of products, individuals and appeals? Attempts to boost the 'deficit' dimension of competence in non-profit firms (Aaker et al., 2010) still did not result in higher purchase intent compared to that of for-profit companies. Nevertheless, future research could fruitfully add an admiration condition when testing the effects of relevance within the SCM/BIAF framework further.

Conclusions

The three experiments presented here contribute to the current body of knowledge by showing that, even if the same (warm vs. competent) advertising strategy is used, its effectiveness depends on the relevance of warmth and competence to other variables present in a consumer context but absent in social perception. Specifically, the relevance principle proposed here held robustly across product involvement levels, participants' levels of

1 technology anxiety and self- versus people-focused advertising appeal types. This testifies to
2 the need for extending the theoretical frameworks such as SCM or BIAF. On a practical
3 level, such an extended model would be capable of informing marketing decisions on *when* to
4 use a warm or competent advertising strategy. In the world of brand perception the ‘golden
5 quadrant’ should be understood as the *optimal* level of warmth and competence as its content
6 shifts according to a broader marketing context.

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1 Table 1

2 *Means and standard deviations by ad strategy and: (a) product involvement in Experiment 1;*
 3 *(b) level of smartphone anxiety in Experiment 2; and (c) advertising appeal type in*
 4 *Experiment 3.*

Experiment and Measure	Independent Variable	Ad Strategy					
		Warm			Competent		
		<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Experiment 1 (purchase intent)							
	high-involving product	24	35.00	28.44	24	49.58	24.93
	low-involving product	24	41.67	27.77	24	36.25	29.31
Experiment 2 (ad effectiveness)							
	high smartphone anxiety	21	3.06	0.78	21	2.76	0.90
	low smartphone anxiety	23	2.83	0.97	23	3.4	0.91
Experiment 3 (service use intent)							
	self-focused appeal	25	23.60	19.12	25	35.20 ^a	22.94
	people-focused appeal	25	51.2	26.19	25	43.20	22.68

5

6 *Note:* Scale endpoints for both purchase and service use intents were 0-100 and for ad
 7 effectiveness they were 1-6. In each case the higher the score the better the ad performance.